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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/976,002 | 10/15/2001 | Tzuoh-Fei Mao | BHT-3111-206 | 9591 |

7590 12/31/2002

DOUGHERTY & TROXELL
SUITE 1404
5205 LEESBURG PIKE
FALLS CHURCH, VA 22041

EXAMINER

STEFANON, JUSTIN

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

3682

DATE MAILED: 12/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/976,002

Applicant(s)

MAO ET AL.

Examiner

Justin Stefanon

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it is in excess of 150 words. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

Claim 1 recites the limitation "an unique tooth contour structure" in line 6. The tooth contour structure has previously been claimed. Claim 1 recites the limitation "the lower portion" in line 20. There is insufficient antecedent basis for this limitation in the claim. The phrase "tooth contour A tooth contour" in line 1 should be replaced with --A tooth contour--.

Claim 3 recites the limitations "the tooth bottom" in lines 2 and 3 and "the prior tooth" in line 3. There is insufficient antecedent basis for these limitations in the claim.

Claim 4 recites the limitations "the lower end" in line 2, "the side end", "the top edge", and "the butting against surface" in line 3. There is insufficient antecedent basis for these limitations in the claim.

Claim 6 recites the limitation "the butting against surface" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat. No. 5,876,296 to Hsu et al.

Hsu et al. disclose a tooth contour structure with a large sprocket 1 and a small sprocket 2 with a first tooth 11, a second tooth 12, and a third tooth 13. The first tooth has a curved surface 11, a cutting portion 16, a projection surface 19, and a recess 14. The top edge of the projection is formed with a slant angle. The recess extends from a tooth bottom of the first tooth to a tooth bottom of a prior tooth, i.e. the second tooth. The cutting portion is located at a lower end of the curved surface and a side end of a top edge of the projection surface. A recessed tooth valley structure 12 is at the side of the second tooth. The projection surface is located at the tooth valley bottom edge between the first tooth and the second tooth. The tops of the first and second teeth are cut off with a predetermined height to become a short tooth.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu et al. in view of US Pat. No. 6,022,284 to Bartolozzi et al.

Hsu et al. disclose the subject matter of claim 1, as discussed above, but do not disclose reducing the height of the first and second teeth relative to the other teeth on the sprocket. Bartolozzi et al. disclose that it is known in the art to provide a tooth contour structure with a projection surface 22 having teeth on either side with reduced height. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the teeth of Hsu et al. with the reduced height of Bartolozzi et al., as Hsu et al. discloses in column 1, lines 30-34 that reduced height teeth are known in the art as a means to ease shifting between sprockets.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art shows a variety of tooth contour structures utilizing combinations of recesses, projection surfaces, curved surfaces, and shortened teeth.

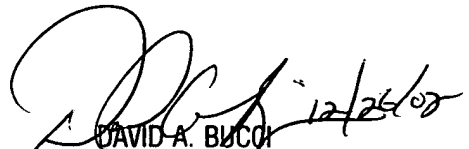
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Stefanon whose telephone number is 703-305-1945. The examiner can normally be reached on Monday - Friday 6 - 3:30.

Art Unit: 3682

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Bucci can be reached on 703-308-3668. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

js
December 23, 2002


DAVID A. BUCCI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600